

Title (en)

A proces for sequestration of water hardness ions

Title (de)

Verfahren zur Sequestrierung von Ionen in harten Wasser

Title (fr)

Procédé pour la séquestration d'ions dans l'eau dure

Publication

EP 0878446 A1 19981118 (EN)

Application

EP 98112579 A 19940125

Priority

- EP 94101078 A 19940125
- US 916493 A 19930126

Abstract (en)

Described is a process for sequestration of water hardness ions, comprising the step of adding to aqueous media containing water hardness ions an effective amount of a maleate copolymer having a weight average molecular weight of 500 to 7,000, a residual total monomer content of less than 1 %, on a maleate copolymer dry weight basis, and comprising at least 50 mole percent of maleate monomer, whereby at least 70 mole percent of the carboxylic acid charge on the maleate monomer is neutralized prior to polymerization, and 10 to 50 mole percent of acrylate monomer.

IPC 1-7

C02F 5/10; **C08F 222/02**

IPC 8 full level

C09K 23/52 (2006.01); **B01J 13/00** (2006.01); **C02F 5/10** (2006.01); **C08F 2/44** (2006.01); **C08F 4/30** (2006.01); **C08F 20/02** (2006.01); **C08F 22/02** (2006.01); **C08F 220/04** (2006.01); **C08F 220/06** (2006.01); **C08F 222/02** (2006.01); **C08K 3/00** (2006.01); **C08L 101/00** (2006.01); **C09D 17/00** (2006.01); **C09K 23/00** (2006.01); **C09K 23/36** (2006.01); **C11D 3/00** (2006.01); **C11D 3/10** (2006.01); **C11D 3/12** (2006.01); **C11D 3/37** (2006.01); **D06L 1/12** (2006.01); **D06M 13/02** (2006.01); **D06M 13/248** (2006.01); **D06M 13/256** (2006.01); **D06M 15/263** (2006.01); **D21H 17/37** (2006.01); **D21H 21/08** (2006.01)

CPC (source: EP US)

C02F 5/10 (2013.01 - EP US); **C09D 17/004** (2013.01 - EP US); **C09K 23/34** (2022.01 - EP US); **C11D 3/0036** (2013.01 - EP US); **C11D 3/10** (2013.01 - EP US); **C11D 3/128** (2013.01 - EP US); **C11D 3/3757** (2013.01 - EP US); **C11D 3/3769** (2013.01 - EP US); **D21H 17/37** (2013.01 - EP US); **D21H 21/08** (2013.01 - EP US)

Citation (search report)

- [X] EP 0398724 A2 19901122 - ROHM & HAAS [US]
- [X] EP 0106110 A1 19840425 - BASF AG [DE]
- [DA] US 4659793 A 19870421 - YANG MO-SHU [US]
- [A] EP 0337694 A2 19891018 - NIPPON CATALYTIC CHEM IND [JP]
- [A] DATABASE WPI Section Ch Week 9127, Derwent World Patents Index; Class A14, AN 91-198558, XP002076933

Designated contracting state (EPC)

BE DE ES FR GB IT NL SE

DOCDB simple family (publication)

EP 0608845 A2 19940803; **EP 0608845 A3 19951025**; **EP 0608845 B1 20030702**; AT E244061 T1 20030715; AU 5397894 A 19940818; AU 670152 B2 19960704; CA 2119998 A1 19940727; CA 2119998 C 19990914; DE 69432876 D1 20030807; DE 69432876 T2 20040603; DE 69433465 D1 20040205; DE 69433465 T2 20041021; DE 69434056 D1 20041111; DE 69434056 T2 20060223; EP 0869169 A1 19981007; EP 0869169 B1 20041006; EP 0875553 A1 19981104; EP 0878446 A1 19981118; EP 0879793 A1 19981125; EP 0879793 B1 20040102; ES 2230637 T3 20050501; JP 2749510 B2 19980513; JP 3424887 B2 20030707; JP H06315622 A 19941115; JP H0952040 A 19970225; US 5925610 A 19990720

DOCDB simple family (application)

EP 94101078 A 19940125; AT 94101078 T 19940125; AU 5397894 A 19940125; CA 2119998 A 19940125; DE 69432876 T 19940125; DE 69433465 T 19940125; DE 69434056 T 19940125; EP 98112579 A 19940125; EP 98112580 A 19940125; EP 98112603 A 19940125; EP 98112604 A 19940125; ES 98112603 T 19940125; JP 19696996 A 19960709; JP 2304994 A 19940125; US 32265894 A 19941012